

OPERATIONAL DESCRIPTION OF WHM900 WIRELESS MODEM

The WHM900 is a wireless modem module operating in licensed free ISM band (900Mhz ~ 928MHz) with FSK modulation. WHM900 can operate at RF data rates from 76.8Kbps to 1200bps and Data Host rates from 300bps to 57.6Kbps. The data link can operate up to 1000 feet depending the environment and operational mode.

Issuing AT commands through a serial interface controls the WHM900 functions. The module can be set-up for point-to-point, point to multi-point, multi-point to point wireless operation. WHM900 can be operated using either Spread Frequency Hopping mode or Non-Hopping fixed frequency mode. The WHM900 uses FSK modulation scheme with Error Correction to assure accuracy.

(Note: User must use Radicom provided antenna.)

Transmit Path:

The processor controls the converted data from the UART to determine the appropriate action as determined by the settings of the AT Commands. The CPU will store /access information in memory and process the data to go to the VCO (Voltage Control Oscillator). VCO will generate RF signal to PA (Power Amplifier). PA will amplify the RF signal to be transmitted. There is one matching network before antenna to provide higher transmit efficiency.

User can issue ATB0 or ATB1 command to operate WHM900 in Non-Hopping or Hopping mode. User can only choose one mode at one time. Default is Non Hopping mode.

- (1) If user issues ATB0 to operate WHM900 in Non-Hopping mode, user can issue AT%A command to change transmit level which affect the field strength of WHM900. The field strength has been restricted to comply with FCC15.249
- (2) If user issues ATB1 to operate WHM900 in Hopping mode, the transmit level is fixed at 4dBm which compiles with FCC15.247. If WHM900 is used in Hopping mode, transmit/receive signal will be transmitted in a predefined sequence.

Receive Path:

Receive signal is received from antenna and matching network to LNA (Low Noise Amplifier). The RF input signal is amplified by LNA and converted down to intermediate frequency (IF) by the mixer (MIXER). The down converted signal is amplified and filtered before fed to the demodulator (DEMOMOD). The DEMOMOD will demodulate the signal to digital data to processor where the CPU will process the data as instructed by the settings of the AT Commands.